

# MATERIAL SAFETY DATA SHEET

Date Prepared: December 29, 2003

## 1. PRODUCT/COMPANY IDENTIFICATION

**Product Name:**  
BONSAL® Portland Cement

**Manufacturer's Name & Address:**  
Bonsal American  
8201 Arrowridge Blvd  
Charlotte, NC 28273

**Emergency Telephone:**  
800-424-9300 (Chemtrec) or  
703-527-3887 (Outside USA)

**Telephone Number for Information:**  
704-525-1621

## 2. EMERGENCY AND FIRST AID

### EMERGENCY INFORMATION:

Portland cement is a light gray powder that poses little immediate hazard. A single short term exposure to the dry powder is not likely to cause serious harm. However, exposure of sufficient duration to wet Portland cement can cause serious, potentially irreversible tissue (skin or eye) destruction in the form of chemical (caustic) burns. The same type of tissue destruction can occur if wet or moist areas of the body are exposed for sufficient duration to dry Portland cement.

### EYES:

Immediately flush eye thoroughly with water. Continue flushing eye for at least 15 minutes, including under lids, to remove all particles. Call physician immediately.

### SKIN:

Wash skin with cool water and pH-neutral soap or a mild detergent. Seek medical treatment if irritation or inflammation develops or persists. Seek immediate medical treatment in the event of burns.

### INHALATION:

Remove person to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration. Seek medical help if coughing and other symptoms do not subside. Inhalation of large amounts of this product requires immediate medical attention.

### INGESTION:

Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately.

## 3. COMPOSITION INFORMATION

**DESCRIPTION:**

This product consists of finely ground Portland cement clinker mixed with a small amount of calcium sulfate (gypsum).

Portland cement is also known as a hydraulic cement. Major components are:

Portland cement CAS # 65997-15-1

Gypsum CAS # 13397-24-5

Crystalline Silica CAS # 14808-60-7

**4. HAZARDOUS INGREDIENTS**

COMPONENT	OSHA PEL (8-Hour TWA)	ACGIH TLV-TWA (1995-1996)	NIOSH REL (8-Hour TWA)
Portland Cement	15 mg total dust/m <sup>3</sup> (5 mg respirable dust/m <sup>3</sup> )	10mg total dust/m <sup>3</sup>	-----
Gypsum	15 mg total dust/m <sup>3</sup> (5 mg respirable dust/m <sup>3</sup> )	10mg total dust/m <sup>3</sup>	
Crystalline Silica (Quartz)	(10mg respirable dust/m <sup>3</sup> )/ (percent silica + 2) (30 mg total dust/m <sup>3</sup> )/ (percent silica + 2)	.10 mg respirable quartz dust /m <sup>3</sup>	.05mg respirable quartz dust/ m <sup>3</sup>

**TRACE CONSTITUENTS:**

Portland cement is made from materials mined from the earth and is processed using heat provided fossil fuels. Trace amounts of naturally occurring, potentially harmful chemicals might be detected during chemical analysis. For example, Portland cement may contain small amounts of insoluble residue, some of which may be free crystalline silica. Other trace constituents may include calcium oxide (also known as free lime or quick lime), free magnesium oxide, potassium and sodium sulfate compounds, chromium compounds, and nickel compounds.

**5. HAZARD IDENTIFICATION****POTENTIAL HEALTH EFFECTS:**

Note: Potential health effects may vary depending upon the duration and degree of exposure. To reduce or eliminate health hazards associated with this product, use exposure controls or personal protection methods as described in Section 10.

**EYE CONTACT:**

Exposure to airborne dust may cause immediate or delayed irritation or inflammation. Eye contact with larger amounts of dry powder or splashes of wet portland cement may cause effects ranging from moderate eye irritation to chemical burns and blindness. Such exposures require immediate first aid and medical attention to prevent significant damage to the eye.

**SKIN CONTACT:**

Discomfort or pain cannot be relied upon to alert a person to a hazardous skin exposure. Consequently, the only effective means of avoiding skin injury or illness involves minimizing skin contact, particularly contact with wet cement. Exposed persons may not feel discomfort until hours after the exposure has ended and significant injury has occurred. Exposure to dry

Portland cement may cause drying of the skin with consequent mild irritation or more significant effects attributable to aggravation of other conditions. Dry Portland cement contacting wet skin or exposure to moist or wet portland cement may cause more severe skin effects including thickening, cracking or fissuring of the skin. Prolonged exposure can cause severe skin damage in the form of (caustic) chemical burns.

**INHALATION:**

Portland cement contains small amounts of free crystalline silica. Prolonged exposure to respirable free crystalline silica can aggravate other lung conditions and cause silicosis, a disabling and potentially fatal lung disease and/ or other diseases. Risk of injury or disease depends on duration and degree of exposure. (Also see "Carcinogenic potential" below.) Exposure to Portland cement may cause irritation to the moist mucous membranes of the nose, throat, and upper respiratory system. It may also leave unpleasant deposits in the nose.

**INGESTION:**

Although small quantities of dust are not known to be harmful, ill effects are possible if larger quantities are consumed. Portland cement should not be eaten.

**CARCINOGENIC POTENTIAL:**

Portland cement has not been listed as a carcinogen by NTP, OSHA, or IARC. It may, however, contain trace amounts of substances listed as carcinogens by these organizations. Crystalline silica, which is present in Portland cement in small amounts, has been listed by IARC as known human carcinogen (Group 1).

<b>6. PHYSICAL/CHEMICAL DATA</b>
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<b>APPEARANCE/ODOR:</b>	Gray or white powder	<b>PHYSICAL STATE:</b>	Solid (powder)
<b>BOILING POINT:</b>	Not applicable	<b>MELTING POINT:</b>	Not applicable
<b>VAPOR PRESSURE:</b>	Not applicable	<b>VAPOR DENSITY:</b>	Not applicable
<b>pH</b>	(in water): 12 to 13	<b>SOLUBILITY IN WATER:</b>	Slightly (0.1 to 1.0%)
<b>SPECIFIC GRAVITY (H<sub>2</sub>O = 1.0):</b>	3.15	<b>EVAPORATION RATE:</b>	Not applicable

<b>7. FIRE AND EXPLOSION</b>
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<b>FLASH POINT:</b>	None	<b>LOWER EXPLOSIVE LIMIT:</b>	None
<b>AUTO IGNITION</b>	Not combustible	<b>UPPER EXPLOSIVE</b>	None

**TEMPERATURE:**

**LIMIT:**

**FLAMMABLE LIMITS**

**SPECIAL FIRE FIGHTING PROCEDURES:**

None (Although Portland cement poses no fire-related hazards, a self-contained breathing apparatus is recommended to limit exposure to combustion products when fighting any fire.)

**EXTINGUISHING MEDIA:**

Not combustible

**UNUSUAL FIRE AND EXPLOSION HAZARDS:**

None

**HAZARDOUS COMBUSTION PRODUCTS:**

None

## 8. STABILITY AND REACTIVITY DATA

**STABILITY:**

Stable.

**CONDITIONS TO AVOID:**

Unintentional contact with water.

**INCOMPATIBILITY:**

Wet Portland cement is alkaline. As such it is incompatible with acids, ammonium salts, and aluminum metal.

**HAZARDOUS DECOMPOSITION:**

Will not spontaneously occur. Adding water products (caustic) calcium hydroxide as a result of hydration.

**HAZARDOUS POLYMERIZATION:**

Will not occur.

## 9. PRECAUTIONS FOR HANDLING, STORAGE AND DISPOSAL

**HANDLING AND STORAGE**

Keep Portland cement dry until used. Normal temperatures and pressures do not affect the material. Promptly remove dusty clothing or clothing which is wet with cement fluids and launder before reuse. Wash thoroughly after exposure to dust or wet cement mixtures or fluids.

**SPILL:**

Collect dry material using a scoop. Avoid actions that cause dust to become airborne. Avoid inhalation of dust and contact with skin. Wear appropriate personal protective equipment as described in Section 10. Scrape up wet material and place in an appropriate container. Allow the material to "dry" before disposal. Do not attempt to wash Portland cement down drains. Dispose of waste material according to local, state, and federal regulations.

**DISPOSAL:**

Dispose of waste material according to local, state, and federal regulations. (Since Portland cement is stable, uncontaminated material may be saved for future use.) Dispose of bags in an approved landfill or incinerator.

<b>10. EXPOSURE CONTROLS/PERSONAL PROTECTION</b>
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**RESPIRATORY PROTECTION:**

Avoid actions that cause dust to become airborne. Use local or general ventilation to control exposures below applicable exposure limits. Use NIOSH/MSHA-approved (under 30 CFR 11) or NIOSH-approved (under 42 CFR 84) respirators in poorly ventilated areas, if an applicable exposure limit is exceeded, or when dust causes discomfort or irritation. (Advisory: Respirators and filters purchased after July 10, 1998, must be certified under 42 CFR 84).

**EYE PROTECTION:**

In conditions where user may be exposed to splashes or puffs of cement, wear safety glasses with side shields or goggles. In extremely dusty or unpredictable environments, wear unvented or indirectly vented goggles to avoid eye irritation or injury. Contact lenses should not be worn when working with Portland cement or fresh cement products.

**SKIN PROTECTION:**

Prevention is essential to avoiding potentially severe skin injury. Avoid contact with unhardened wet Portland cement products. If contact occurs, promptly wash affected area with soap and water. Where prolonged exposure to unhardened Portland cement products might occur, wear impervious clothing and gloves to prevent skin contact. Where required, wear sturdy boots that are impervious to water to eliminate foot and ankle exposure. Do not rely on barrier creams; barrier creams should not be used in place of gloves. Periodically wash areas contacted by dry Portland cement or wet cement or concrete with a pH neutral soap. Wash again at the end of the work. If irritation occurs, immediately wash the affected area and seek treatment. If clothing becomes saturated with wet concrete, it should be removed and replaced with clean, dry clothing.

<b>11. TRANSPORTATION DATA</b>
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Portland cement is not hazardous under U.S. Department of Transportation (DOT) regulations.

<b>12. OTHER REGULATORY INFORMATION</b>
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**Status under US OSHA Hazard  
Communication Rule 29 CFR 1910.1200:**

Portland cement is considered a "hazardous chemical" under this regulation, and should be part of any hazard communication program.

**Status under CERCLA/Superfund, 40 CFR**

Not listed.

**117 and 302:**

**Hazard Category under SARA (Title III),  
Sections 311 and 312:**

Portland cement qualifies as a “hazardous substance” with delayed health effects.

**Status under SARA (Title III), Section 313:**

Not subject to reporting requirements under section 313.

**Status under TSCA (as of May 1997):**

Some substances in Portland cement are on the TSCA inventory list.

**Status under the Federal Hazardous  
Substances Act:**

Portland cement is a “hazardous substance” subject to statutes promulgated under the subject act.

**Status under California Proposition 65:**

Portland cement contains chemicals (trace metals) known to the State of California to cause cancer, birth defects or other reproductive harm. California law requires the manufacturer to give the above warning in the absence of definitive testing to prove that the defined risks do not exist.

**Status under Canadian Environmental  
Protection Act:**

Not listed.

**Status under Canadian WHMIS:**

Portland cement is considered to be a hazardous material under the Hazardous Product Act as defined by the Controlled Products Regulations (Class E- Corrosive Material) and is therefore subject to the labeling and MSDS requirements of the Workplace Hazardous Materials Information System (WHMIS).

### **13. OTHER INFORMATION**

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. It is the user’s obligation to determine the conditions of safe use of this product.